

REMARKS/ARGUMENTS

I. Introduction

Receipt is acknowledged of the Final Office Action dated December 16, 2003. Currently, claims 2-9 remain pending in the application. Claims 10-12 were canceled in Applicant's Preliminary Amendment filed March 13, 2003. Claim 1 was canceled in Applicant's Amendment filed September 24, 2003. Claims 2-6 are canceled herewith. Claims 2-6 have been rewritten as new claims 13-17 to depend from independent claim 7. Claims 7-9 have been amended. No new matter has been added in these amendments.

II. The Examiner's Rejections and Applicant's Responses

A. Rejections Under 35 U.S.C. § 112, second paragraph

The Examiner has rejected claims 2-6 and 9 under 35 U.S.C. § 112, second paragraph, as being indefinite for the alleged reason that it is uncertain what dimension or parameter (i.e., radius, diameter, thickness, spacing, etc.) defines "0.8 mm, 0.5 mm, and 0.2 mm, respectively" in claim 2.

Applicant respectfully traverses this rejection and without acquiescing in the rejection, Applicant has rendered this rejection moot by canceling claims 2-6, thereby deleting the claim language "0.8 mm, 0.5 mm, and 0.2 mm, respectively" in claim 2 and by amending claim 9 to depend from claim 7 instead of claim 2. New claims 13-17, which correspond to canceled claims 2-6, and claim 9 should no longer be subject to rejection because they have been amended to depend from amended independent claim 7. Therefore, claims 9 and 13-17 do not encompass any of the limitations of canceled claim 2, such as alleged indefinite hole dimensions, that

prompted the Examiner's rejection of claims 2-6 and 9. Thus, Applicant respectfully requests that these rejections be withdrawn.

B. Rejections Under 35 U.S.C. § 103(a)

1. Dixon in view of Blair

The Examiner has rejected claims 2-5 and 9 under 35 U.S.C. § 103(a) as being unpatentable over Dixon (U.S. Patent No. 4,508,138) in view of Blair (U.S. Patent No. 3,853,146). The Examiner has stated that although Dixon differs from the claimed invention in hole diameter, it would have been obvious to one of ordinary skill in the art at the time of the invention to have provided three groups of holes having diameters of 0.8 mm, 0.5 mm, and 0.2 mm to vary the delivery of the fluid, as taught in Blair.

Applicant respectfully traverses this rejection and without acquiescing in the rejection, Applicant has rendered this rejection moot by canceling claims 2-5, thereby deleting the claim language "0.8 mm, 0.5 mm, and 0.2 mm, respectively" in claim 2 and by amending claim 9 to depend from claim 7 instead of claim 2. New claims 13-16, which correspond to canceled claims 2-5, and claim 9 should no longer be subject to rejection because they have been amended to depend from amended independent claim 7. Therefore, claims 9 and 13-16 do not encompass any of the limitations of canceled claim 2, such as holes having diameters of 0.8 mm, 0.5 mm, and 0.2 mm, that prompted the Examiner's rejection of claims 2-5 and 9. Thus, Applicant respectfully requests that these rejections be withdrawn.

2. Dixon in view of Benton

The Examiner has rejected claim 7 under 35 U.S.C. § 103(a) as being unpatentable over Dixon (U.S. Patent No. 4,508,138) in view of Benton (U.S. Patent No. 329,881). The Examiner has alleged that Dixon discloses an atomizing apparatus comprising: an outer cylinder, an outlet, an inlet, a chamber, and an inner cylinder. The Examiner has stated that Dixon discloses the limitations of the claimed invention with the exception of the water passage and that it would have been obvious to a person having ordinary skill in the art at the time of the invention to have provided a water passage in the device of Dixon as taught by Benton to thaw fluid.

Applicant respectfully traverses this rejection. To establish a *prima facie* case of obviousness under 35 U.S.C. § 103, three basic criteria must be met: 1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine the reference teachings; 2) there must be a reasonable expectation of success upon combining such references; and 3) the prior art reference (or references when combined) must teach or suggest all the claim limitations. “A prior art reference must be considered in its entirety, *i.e.*, as a whole, including portions that would lead away from the claimed invention.” *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984) (emphasis applied). An inquiry that focuses on [mere] substitutions and differences, instead of the invention as a whole, is legally improper. *See Hybritech v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1383, 231 U.S.P.Q. 81, 93 (Fed. Cir. 1986). Evidence of a suggestion, teaching or motivation to modify a reference may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to

be solved. *See Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996), *Para-Ordinance Mfg. v. SGS Imports Intern., Inc.*, 73 F.3d 1085, 1088, 37 USPQ2d 1237, 1240 (Fed. Cir. 1995), although "the suggestion more often comes from the teachings of the pertinent references," *In re Rouffett*, 149 F.3d 1350, 1355, 47 USPQ2d 1453, 1456 (Fed. Cir. 1998). The teaching or suggestion to make the claimed combination and the reasonable expectation of success must not be based on the Applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). *See* M.P.E.P. § 2142, and "may not be established using hindsight or in view of the teachings or suggestions of the inventor." *Para-Ordinance Mfg.*, 73 F.3d at 1087, 37 USPQ2d at 1239, *citing W.L. Gore*, 721 F.2d at 1551, 1553, 220 USPQ at 311, 312-13. Likewise, a broad conclusory statement regarding the obviousness of modifying a reference, standing alone, is not "evidence". *McElmurry v. Arkansas Power & Light Co.*, 995 F.2d 1576, 1578, 27 USPQ2d 1129, 1131 (Fed. Cir. 1993). "The mere fact that the prior art may be modified in the manner suggested by the Examiner does not suggest the desirability of the modification." *In re Fritch*, 972 F.2d 1260, 1266 n. 14, 23 USPQ2d 1780, 1783-84 n. 14 (Fed. Cir. 1992), *citing In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). When the motivation to combine the teachings of the references is not immediately apparent, it is the duty of the Examiner to explain why the combination of the teachings is proper. *Ex parte Skinner*, 2 U.S.P.Q.2d 1788 (Bd. Pat. App. & Inter. 1986). "The mere fact that references *can* be combined or modified does not render the resultant combination obvious, unless the prior art also suggests the *desirability* of the combination." M.P.E.P. § 2143.01 (*citing In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990) (emphasis added)).

Applicant notes that claim 7 has been amended to recite "a water passage provided *on the central axis of* said inner cylinder" (emphasis added), in order to further distinguish the claimed invention (as pictured in Figure 5, no. 25). Applicant submits that amended claim 7 is unobvious in view of Dixon or Benton and that the Examiner has not shown why one of ordinary skill in the art would have been motivated to successfully combine Dixon with Benton. Dixon claims a valve comprising "an inlet chamber disposed about an axis" and a valve body that is "symmetrical about a main axis" (col. 3-4, claims 1, 4). The object of the Dixon patent is to provide a generic polyjet valve with a fluid backwash feature to reverse the direction of a liquid flow and to get rid of waste. Dixon does not teach for what this polyjet would be useful. Nor does Dixon make any reference to temperature control or thawing.

The object of the Benton patent is to instantly thaw frozen hydrant or water-pipes by injecting a jet of steam through a smaller tube inserted into a frozen hydrant or water-pipe. The Benton patent does not disclose a means by which the water-pipe passageway affects thawing through controlled temperature regulation. The three disclosed water pipes (d⁵) of Benton are not arranged around the center of the main water pipe (e), but are arranged symmetrically in relation to each other in the main pipe as shown in Fig. 4 because this arrangement is desirable for thawing fluid in the main pipe. The Benton patent was disclosed in 1885 and does not seem to be commonly used in the prior art. Furthermore, although Benton teaches that the claimed tube may be attached to a hydrant or water pipe, it would not be apparent to one of ordinary skill in the art where on the main pipe of Dixon, to place the water pipes (d⁵) of Benton. There are numerous choices of positions in which to place the water pipes and numerous purposes that

each of the inventions taught in Dixon and Benton could have, which are different from the claimed invention.

Even if there was a motivation to combine Dixon and Benton, the combined teachings would not teach all of the limitations of the claimed invention. In contrast to Dixon and Benton or any combination thereof, the water passage (25) of the present invention is provided for the purpose of excellent atomization processing through temperature regulation (see page 6, lines 1-9), the plurality of the holes are opposed to one another on the same circumference of inner cylinder 17 (page 5, lines 21-22), and the water passage (25) of the present invention is arranged along the center of the inner cylinder (17) because this is desirable for excellently atomizing pressurized raw materials in the inner cylinder.

Applicant respectfully submits that because of the differences between Dixon and Benton, one of ordinary skill in the art would not have been motivated to successfully place the water-thawing pipe device of Benton in the polyjet valve of Dixon in order to control an atomization process through temperature regulation, as in the claimed invention, and neither Dixon, Benton, or any combination thereof teach all of the limitations of the claimed invention. Therefore, Applicant respectfully requests that this rejection be withdrawn.

3. Dixon in view of Young et al.

The Examiner has rejected claim 8 under 35 U.S.C. § 103(a) as being unpatentable over Dixon (U.S. Patent No. 4,508,138) in view of Young *et al.* (U.S. Patent No. 6,012,646). The Examiner has stated that although Dixon allegedly teaches the claimed invention except for a conduit passage, it would have been obvious to one of ordinary skill in the art to have combined the conduit passage and material supply port of Young et al. with the polyjet valve of Dixon to

prevent over-pressurization.

Applicant respectfully traverses this rejection and without acquiescing in the rejection, Applicant has rendered this rejection moot by amending claim 8 to delete part (e) which refers to a conduit passage. Thus, Applicant respectfully requests that these rejections be withdrawn.

III. Conclusion

In consideration of the above amendments and remarks, Applicant respectfully requests that the rejections under § 112, second paragraph and § 103(a) be withdrawn and a timely Notice of Allowance be issued in this application. Should there be any questions, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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